

Notice of Allowability

Application No.

10/665,296

Applicant(s)

FUKUSHIMA ET AL.

Examiner

Yahveh Comas

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/6/2006.
2. ☒ The allowed claim(s) is/are 1-54.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-54 were allowed.
2. The following is an examiner's statement of reasons for allowance:

Applicant teaches segment joined armature for a multi-phase ac machine comprising an armature core having slots, q (= integer greater than or equal to two) for each pole in each phase, the slots being arrayed in a circumferential direction of said armature core and an armature winding made up of m (= integer greater than or equal to three) phase coils, each of the phase coils being made up of a first phase winding and a second phase winding which are identical in number of turns and extending in opposite winding directions, wherein each of the first and second phase windings is made up of at least one wave winding segment and lap winding segments joined alternately, the wave winding segment and the lap winding segments being formed by sequentially joined-conductor segments, each of the conductor segments including a substantially V-shaped head portion, a pair of leg portions extending from ends of the head portion, disposed in two of the slots of said armature core located at a given interval away from each other, and a pair of joint end portions extending from ends of the leg portions, s (= integer greater than or equal to four) of the leg portions being arrayed within each of the slots of said armature core in a radius direction of said armature core, each of the joint end portion of each of the conductor segments being joined to one of the joint end portions of another of the conductor segments to make each of the first and second phase windings, wherein the wave winding segment is

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made up of the conductor segment having the join end portions located at ends thereof at an interval away from each other which is greater than one pole pitch, each of the lap winding segments being made up of the conductor segment having the joint end portions located at ends thereof at an interval away from each other which is less than one pole pitch, and wherein an end of the first phase winding and an end of the second phase winding are formed by two of the leg portions of the conductor segments which are disposed adjacent to each other in the radius direction within the same one of the slots of said armature core and which lead to two first terminal leads, and the other end of the first phase winding and the other end of the second phase winding are formed by two of the leg portions of the conductor segments which are disposed adjacent to each other in the radius direction within the same one of the slots of said armature core and which lead to two second terminal leads.

Umeda (JP. Pat. 2000-92766) discloses a multi-phase ac machine. However, the cited reference fail to individually disclose, or suggest when combined, a multi-phase machine wherein an end of the first phase winding and an end of the second phase winding are formed by two of the leg portions of the conductor segments which are disposed adjacent to each other in the radius direction within the same one of the slots of said armature core and which lead to two first terminal leads, and the other end of the first phase winding and the other end of the second phase winding are formed by two of the leg portions of the conductor segments which are disposed adjacent to each other in the radius direction within the same one of the slots of said armature core and which lead to two second terminal leads.

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No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically wherein an end of the first phase winding and an end of the second phase winding are formed by two of the leg portions of the conductor segments which are disposed adjacent to each other in the radius direction within the same one of the slots of said armature core and which lead to two first terminal leads, and the other end of the first phase winding and the other end of the second phase winding are formed by two of the leg portions of the conductor segments which are disposed adjacent to each other in the radius direction within the same one of the slots of said armature core and which lead to two second terminal leads in combination with the recited structural limitations of the claimed invention.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

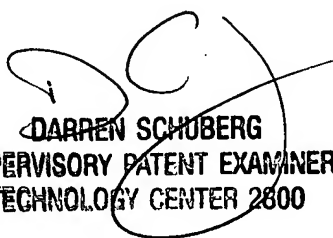
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yahveh Comas whose telephone number is (571) 272-2020. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YC


DARREN SCHUBERG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800